

**WHAT IS CLAIMED IS:**

1. A liquid crystal display comprising:
  - a liquid crystal panel assembly including a plurality of gate lines, a plurality of data lines crossing the gate lines, and a plurality of pixels formed at crossing points of the gate lines and the data lines;
  - a signal controller receiving image data and a synchronization signal from an external graphic source, generating a control signal for driving the liquid crystal panel assembly, and converting format of the image data;
  - a voltage generator generating gray voltages and gate voltages for driving the liquid crystal panel assembly;
  - a gate driver sequentially scanning the gate lines of the liquid crystal panel assembly by unit of horizontal scan period based on the gate voltages;
  - a data driver selecting the gray voltages corresponding to the image data from the signal controller for respective data lines on the liquid crystal panel assembly;
  - an inverter generating a first luminance control signal having an analog value depending on luminance distribution of the image data and a second luminance signal having a pulse duty ratio determined by multiples of a frame frequency, synthesizing the first luminance control signal and the second luminance control signal, and generating a lamp driving signal based on the synthesized signal; and
  - a lamp having on and off states and intensity controlled in response to the driving signal from the inverter.
2. The liquid crystal display of claim 1, wherein the inverter comprises:
  - a first block generating the first luminance control signal having the analog value depending on the luminance distribution of the image data;
  - a second block generating the second luminance control signal having the duty ratio depending on a frequency of the synchronization signal; and
  - a synthesizer synthesizing the first luminance control signal and the second luminance control signal generated from the first and the second block,

and the liquid crystal display further comprises:

a transistor circuit generating a current based on a signal outputted from the synthesizer; and

5 a lamp driving unit generating a high-voltage lamp driving signal based on the current supplied from the transistor circuit.

3. The liquid crystal display of claim 2, wherein the first block counts the image data depending on the luminance distribution, calculates the number of the image data representing a predetermined luminance range from the count, and generates a first luminance control signal by comparing the  
10 calculation with a stored data in a reference table.

4. The liquid crystal display of claim 3, wherein the first block counts and calculates luminance distribution of the image data by unit of horizontal scan period.

5. The liquid crystal display of claim 2, wherein the first block  
15 employs an analog dimming control and the second block employs a pulse-width modulation dimming control.